NSTA Science Standards

1. Unifying Concepts

K-12 Targets

a. Systems, order, and organization
b. Evidence, models, and measurement
c. Change, constancy, and measurement
d. Evolution and equilibrium
e. Form and function

2. Science as Inquiry

K-4 Targets

a. Abilities necessary to do scientific inquiry
(1) Ask a question about objects, organisms, and events in the environment
(2) Plan and conduct a simple investigation
(3) Employ simple equipment and tools to gather data and extend the senses
(4) Use data to construct a reasonable explanation
(5) Communicate investigations and explanations
b. Understandings about scientific inquiry

5-8 Targets

a. Abilities necessary to do scientific inquiry
(1) Identify questions that can be answered through scientific investigations
(2) Design and conduct a scientific investigation
(3) Use appropriate tools and techniques to gather, analyze, and interpret data
(4) Develop descriptions, explanations, predictions, and models using evidence
(5) Think critically and logically to make the relationships between evidence and explanations
b. Understandings about scientific inquiry

9-12 Targets

a. Abilities necessary to do scientific inquiry
(1) Identify questions and concepts that guide scientific investigations
(2) Design and conduct scientific investigations
(3) Use technology and mathematics to improve investigations and communications
(4) Formulate and revise scientific explanations and models using logic and evidence
(5) Recognize and analyze alternative explanations and

models
(6) Communicate and defend a scientific argument
b. Understandings about scientific inquiry

3. Physical Science

K-4 Targets
a. Properties of objects and materials
b. Position and motion of objects
c. Light, heat, electricity, and magnetism

5-8 Targets
a. Properties &changes in matter
b. Motion and forces
c. Transfer of energy

9-12 Targets
a. Structure of atoms
b. Structure and properties of matter
c. Chemical reactions
d. Motion and forces
e. Conservation of energy and increase in disorder
f. Interaction of energy and matter

4. Life Science

K-4 Targets
a. Characteristics of organisms
b. Life cycles of organisms
c. Organisms and environments

5-8 Targets
a. Structure and function in living systems
b. Reproduction and heredity
c. Regulation and behavior
d. Populations and ecosystems
e. Diversity and adaptations of organisms

9-12 Targets
a. The cell
b. Molecular basis of heredity
c. Biological evolution
d. Interdependence of organisms
e. Matter, energy, and organization of living systems
f. Behavior of organisms

5. Earth and Space Science

K-4 Targets
a. Properties of earth materials
b. Objects in the sky
c. Changes in earth and sky

5-8 Targets
a. Structure of the earth system
b. Earth's history
c. Earth in the solar system

9-12 Targets
a. Energy in the earth systems
b. Geochemical cycles
c. Origin and evolution of the earth system
d. Origin and evolution of the universe

6. Science and Technology

K-4 Targets
a. Abilities of technological design
b. Understanding about science and technology
c. Abilities to distinguish between natural and man-made objects

5-8 Targets
a. Abilities of technological design
b. Understanding about science and technology

9-12 Targets
a. Abilities of technological design
b. Understanding about science and technology

7. Science in Personal and Social Perspectives

K-4 Targets
a. Personal health
b. Characteristics & changes in populations
c. Types of resources
d. Changes in environment
e. Science and Technology in local challenges

5-8 Targets
a. Personal health
b. Populations , resources and environments
c. Natural hazards
d. Risks and benefits
e. Science and Technology in society

9-12 Targets
a. Personal and community health
b. Population growth
c. Natural resources
d. Environmental Quality
e. Natural and human induced hazards
f. Science and technology in local, national, & global challenges

8. History and Nature of Science

K-4 Targets	a. Science as a human endeavor
5-8 Targets	a. Science as a human endeavor b. Nature of science c. History of science
9-12 Targets	a. Science as a human endeavor b. Nature of scientific knowledge c. Historical perspectives